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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,334	09/24/2003	Yu-Tung Huang	38699-8035US	5674

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EXAMINER

WILLIAMS, ALEXANDER O

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 04/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

4-7

Office Action Summary	Application No. 10/671,334	Applicant(s) HUANG ET AL.	
	Examiner Alexander O. Williams	Art Unit 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2826

Serial Number: 10/671334 Attorney's Docket #: 38699-8035US

Filing Date: 9/24/2003;

Applicant: Yu-Tung Huang

Examiner: Alexander Williams

This application is a divisional of serial # 09/275815, filed 3/25/1999, now U.S. Patent # 6,642,611, issued 11/4/03.

Applicant's Amendment filed 1/14/05 to the election without of Group I (claims 1 to 21), filed 7/15/04, has been acknowledged.

Claims 22-33 have been canceled.

The disclosure is objected to because of the following informalities: The divisional application information should be updated.

Appropriate correction is required.

Claims 2 and 13 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Again, in claims 2 and 13, it is unclear and confusing to what makes up an "A1 substrate." The use of the trademark "A1 substrate" has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology. Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks. If A1 substrate is a trademark substrate, what is an A1 substrate made of?

Any of claims 2 and 13 not specifically addressed above are rejected as being dependent on one or more of the claims which have been specifically objected to above.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6, 8, 9, 12, 14, 18 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Moore et al. (U.S. Patent # 5,120,678).

In claim 1, Moore et al. (figures 1 to 5) specifically figure 2 show a package assembly for an electronic device **12**, comprising: a substrate **14,18,20** having a first surface with a first plurality of contact pads (**pads within 43 not labeled**) and a second plurality of contact pads **22**, a second surface with a plurality of connection pads (**inherit**), and a plurality of via holes **24** connecting said first plurality of contact pads and said plurality of connection pads; and a buffer layer **46** between said substrate and said electronic device, and a surface of said electronic device having electrodes **40** being opposite to said first surface of said substrate, said buffer layer having an opening **43** to expose said first plurality of contact pads, wherein said buffer layer surrounds the edge of said electronic device **12** and a fastening face of said edge of said electronic device and said buffer layer is unflattened.

In claims 3 and 14, Moore et al. show the buffer layer **46** is selected from polymer film layer.

6. The package assembly in claim 1, Moore et al. (figure 2) show wherein said opening in said buffer is preformed

8 and 18. The package assembly in claim 1 or 12, Moore et al.(figure 2) show wherein said buffer layer has a thickness of 30-200 microns. Note that the specification contains no disclosure of either the critical nature of the claimed dimensions or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

9 and 19. The package assembly in claim 1, Moore et al. (figure 2) show wherein said fastening face of said edge of said electronic device and said buffer layer has a corner.

12. Moore et al. (figures 1 to 5) specifically figure 2 show a package assembly for a electronic device, comprising: a substrate **14,18,20** having a first surface with a first plurality of contact pads (**pads within 43 not labeled**) and a second plurality of contact pads **22**, a second surface with a plurality of connection pads (**inherit**), and a plurality of via holes **24** connecting said first plurality of contact pads and said plurality of connection pads; and a buffer layer **46** having a plurality of openings to expose **43** said first plurality of contact pads, and said plurality of electronic devices being on said plurality of openings respectively, wherein a respective surface of said electronic device having electrodes **40** is opposite to said first surface of said substrate, said buffer layer surrounds the edge of said plurality of electronic devices, and fastening faces of said edge of said plurality of electronic devices **12** and said buffer layer are unflattened.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 6, 10, 16 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Moore et al. (U.S. Patent # 5,120,678).

As to claims 5, 6, 10, 16 and 20, initially, and with respect to claims 5, 6, 10, 16 and 20, note that a "product by process" claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Fitzgerald, 205 USPQ 594, 596 (CCPA); In re Marosi et al., 218 USPQ 289 (CAFC); and most recently, In re Thorpe et al., 227 USPQ 964 (CAFC, 1985) all of which make it clear that it is the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that Applicant has burden of proof in such cases as the above case law makes clear.

As to the grounds of rejection under section 103, see MPEP § 2113.

Claims 1, 2, 4-13 and 15-21, **insofar as claims 2 and 13 can be understood**, are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fukihura (U.S. Patent # 6,150,748).

1. Fukiharu (figures 1 to 7) specifically figure 5 show a package assembly for an electronic device, comprising: a substrate **36** having a first surface with a first plurality of contact pads **4-1** and a second plurality of contact pads **4-2**, a second surface with a plurality of connection pads, and a plurality of via holes connecting said first plurality of contact pads and said plurality of connection pads; and a buffer layer (**portion of 21-2,32 between 1 and 36 and the portion along the side of 1**) between said substrate and said electronic device, and a surface of said electronic device having electrodes **3-1, 3-2** being opposite to said first surface of said substrate, said buffer layer having an opening to expose said first plurality of contact pads, wherein said buffer layer

surrounds the edge of said electronic device and a fastening face of said edge of said electronic device and said buffer layer is unflattened. Fukihura (figures 4 and 5) fail to explicitly show a second surface with a plurality of connection pads, and a plurality of via holes connecting said first plurality of contact pads and said plurality of connection pads. However, it would be obvious to one of ordinary skill in the art that the contact pads 4-1,4-2 are further connected through the substrate to an external connection.

Fukiharu is cited for showing a surface acoustic wave device. Specifically, Fukiharu (figures 1 and 2) discloses a package assembly for an electronic device, comprising: a substrate 11 having a first surface with a first plurality of contact pads 4-1 and a second plurality of contact pads 4-2; a second surface with a plurality of connection pads 10-1,10-2, and a plurality of via holes 9-2,9-1 connecting said first plurality of contact pads and said plurality of connection pads; a second surface with a plurality of connection pads, and a plurality of via holes connecting said first plurality of contact pads and said plurality of connection pads for the purpose of being capable of electrically shielding the SAW element against an external electric field while design to have a small volume.

2. The package assembly in claim 1, Fukiharu (figure 1) show wherein the material of said substrate is selected from the group consisting a ceramic substrate.

4. The package assembly in claim 1, Fukiharu (figure 5) show wherein said buffer layer is conductive (**portion of 21-2,32 between 1 and 36 and the portion along the side of 1**) .

As to claims 5, 6, 10, 16 and 20, initially, and with respect to claims 5, 6, 10, 16 and 20, note that a "product by process" claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Fitzgerald, 205 USPQ 594, 596 (CCPA); In re Marosi et al., 218 USPQ 289 (CAFC); and most recently, In re Thorpe et al., 227 USPQ 964 (CAFC, 1985) all of which make it clear that it is the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that Applicant has burden of proof in such cases as the above case law makes clear.

As to the grounds of rejection under section 103, see MPEP § 2113.

6. The package assembly in claim 1, Fukiharu (figure 5) show wherein said opening in said buffer is preformed.

As to claim 7, initially, it is noted that the 35 U.S.C. § 103 rejection based on a buffer layer and a conductive layer deals with an issue (i.e., the integration of multiple pieces into one piece or conversely, using multiple pieces in replacing a single piece) that has been previously decided by the courts.

In Howard v. Detroit Stove Works 150 U.S. 164 (1893), the Court held, "it involves no invention to cast in one piece an article which has formerly been cast in two pieces and put together...."

In In re Larson 144 USPQ 347 (CCPA 1965), the term "integral" did not define over a multi-piece structure secured as a single unit. More importantly, the court went further and stated, "we are inclined to agree with the solicitor that the use of a one-piece construction instead of the [multi-piece] structure disclosed in Tuttle et al. would be merely a matter of obvious engineering choice" (bracketed material added). The court cited In re Fridolph for support.

In re Fridolph 135 USPQ 319 (CCPA 1962) deals with submitted affidavits relating to this issue. The underlying issue in In re Fridolph was related to the end result of making a multi-piece structure into a one-piece structure. Generally, favorable patentable weight was accorded if the one-piece structure yielded results not expected from the modification of the two-piece structure into a single piece structure. In claim 7, Fukiharu further comprises a conductive layer 32, 21-2 formed on said electronic device 1.

Therefore, it would have been obvious to one of ordinary skill in the art to use the buffer layer and the conductive layer as "merely a matter of obvious engineering choice" as set forth in the above case law.

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8 and 18. The package assembly in claim 1 or 12, Fukiharu (figure 5) show wherein said buffer layer has a thickness of 30-200 microns. Note that the specification contains no disclosure of either the critical nature of the claimed dimensions or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

9. The package assembly in claim 1, Fukiharu (figure 5) show wherein said fastening face of said edge of said electronic device and said buffer layer has a corner.

Initially, and with respect to claims 5, 6, 10, 16 and 20, note that a "product by process" claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Fitzgerald, 205 USPQ 594, 596 (CCPA); In re Marosi et al., 218 USPQ 289 (CAFC); and most recently, In re Thorpe et al., 227 USPQ 964 (CAFC, 1985) all of which make it clear that it is the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that, as here, an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that Applicant has burden of proof in such cases as the above case law makes clear.

As to the grounds of rejection under section 103, see MPEP § 2113.

11 and 21. The package assembly in claims 1 or 12, Fukiharu (figure 5) show wherein said electronic device is a surface acoustic wave device **1**.

12. Fukuharu (figures 1 to 7) specifically figure 5 show a package assembly for a electronic device, comprising: a substrate **11** having a first surface with a first plurality of contact pads **4-1** and a second plurality of contact pads **4-2**; and a buffer layer (**portion of 21-2,32 between 1 and 36 and the portion along the side of 1**) having a plurality of openings to expose said first plurality of contact pads, and said plurality of electronic devices being on said plurality of openings respectively, wherein a respective surface of said electronic device having electrodes **3-1,3-2** is opposite to said first surface of said substrate, said buffer layer surrounds the edge of said plurality of electronic devices, and fastening faces of said edge of said plurality of electronic devices and said buffer layer are unflattened. Fukuhura fails to show a plurality of electronic device; a second surface with a plurality of connection pads; and a plurality of via holes connecting said

first plurality of contact pads and said plurality of connection pads. However, it would be obvious to one of ordinary skill in the art that if one electronic device, a plurality can be formed and the contact pads **4-1,4-2** are further connected through the substrate to an external connection.

Fukiharu is cited for showing a surface acoustic wave device. Specifically, Fukiharu (figures 1 and 2) discloses a package assembly for an electronic device, comprising: a substrate **11** having a first surface with a first plurality of contact pads **4-1** and a second plurality of contact pads **4-2**; a second surface with a plurality of connection pads **10-1,10-2**, and a plurality of via holes **9-2,9-1** connecting said first plurality of contact pads and said plurality of connection pads; a second surface with a plurality of connection pads, and a plurality of via holes connecting said first plurality of contact pads and said plurality of connection pads for the purpose of being capable of electrically shielding the SAW element against an external electric field while design to have a small volume.

13. The package assembly in claim 12, Fukihura (figure 1) show wherein the material of said substrate is selected from the group consisting of a ceramic substrate.

17. The package assembly in claim 12, Fukihura (figure 5) show wherein said buffer layer is conductive **32,21-2**.

19. The package assembly in claim 12, Fukihura (figure 5) show wherein said fastening faces of said edge of said plurality of electronic devices **1** and said buffer layer (**portion of 21-2,32 between 1 and 36 and the portion along the side of 1**) have a corner respectively.

Therefore, it would have been obvious to one of ordinary skill in the art to use the teaching of Fukihura's SAW device for the purpose of being capable of electrically shielding the SAW element against an external electric field while design to have a small volume.

Response

Applicant's arguments filed 1/14/05 have been fully considered, but are moot in view of the modified grounds of rejections detailed above.

The listed references are cited as of interest to this application, but not applied at this time.

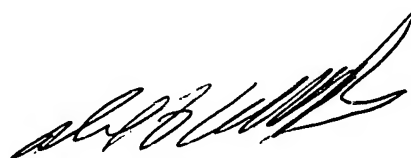
Field of Search	Date
U.S. Class and subclass: 257/778,680,774,772,779,737,734,738,690,691,696,698,6 68,787,784,786,700,701,758,783 310/348,313 R,340,344 174/260,261 361/760,772,777 385/14,49,91 333/133,193	9/13/04 4/8/05
Other Documentation: foreign patents and literature in 257/778,680,774,772,779,737,734,738,690,691,696,698,6 68,787,784,786,700,701,758,783 310/348,313 R,340,344 174/260,261 361/760,772,777 385/14,49,91 333/133,193	9/14/04 4/8/05
Electronic data base(s): U.S. Patents EAST	9/14/04 4/8/05

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander O Williams whose telephone number is (571) 272 1924. The examiner can normally be reached on M-F 6:30-7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272 1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AOW
4/8/05

A handwritten signature in black ink, appearing to read 'Alexander O. Williams', with a stylized, flowing script.

Primary Patent Examiner
Alexander O. Williams